

## Draft Preliminary Dairy Facility Assessment

Use the "TAB" key to move to data entry fields (yellow cells) or mouse pointer to pulldown menus.

Facility Name:

Facility Address:

County:

Contact Name:

Contact Telephone Number:  Cellular Phone Number:

### Land Area:

Land Use	Acres Owned	Acres Leased	Acres Under Agreement	Acres (Subtotals)
Fields and Facility Combined				-
Dairy Production Area (Corrals, Barns, Ponds, Feed Storage)				-
Crop Land Area				-
Cropland Area used for Manure (Lagoon & Solids) Application				-

### Herd and Milking:

Select predominant animal Breed: <input type="text"/> Select Predominant Breed <input type="text"/>						
Enter appropriate information as requested.						
	Milk Cows	Dry Cows	Bred Heifers 15 - 24 Months	Heifers: 7 - 14 Months (to Breeding)	Calves 4 - 6 Months	Calves to 3 Months
	Number/Head					
	Average Live Weight (lbs)					
	Average Milk Production (lbs/cow/day)					
Daily Hours (On Flush)						

Average number of Milk Cows per String sent to Milkbarn

Storage Period in days (minimum recommended value is 120 days)

Number of milkings (per day)

Number of times milk tank is cleaned each day

Number of hours spent milking each day

Bulk tank wash and sanitizing

Pipeline wash and sanitizing

<input type="text"/>	Milk Cows/String
Select Period <input type="text"/>	days
<input type="text"/>	milkings/day
<input type="text"/>	milk loads/day
<input type="text"/>	hours/day
<input type="text"/>	Run Cycles
<input type="text"/>	Run Cycles

### Milkbarn and Parlor Floor Wash

Automated Parlor Deck (Floor) Flush Valve	Select Yes or No <input type="text"/>
Manual Parlor Deck (Floor) Flush	Select Yes or No <input type="text"/>
Rotary / Carousel Wash Down	Select Yes or No <input type="text"/>
Glycol/Air/Water Cooled Plate Coolers (Open Loop)	Select Yes or No <input type="text"/>
Water Cooled Plate Coolers (Open Loop)	Select Yes or No <input type="text"/>
Water Cooled Vacuum Pumps/Air Compressors/Ice Chillers (Open Loop)	Select Yes or No <input type="text"/>
All non-contact cooling water Recycled through Sprinkler Pen	Select Yes or No <input type="text"/>

### Sprinkler Pen

Number of sprinklers in the holding pen

How long is each sprinkler cycle (minutes)

How many times does the sprinkler pen run/milking

What is the water flow rate of each sprinkler head

<input type="text"/>	min
<input type="text"/>	
<input type="text"/>	gpm

### Flush Water

Fresh water used in manure flush lanes (gallons/day)

<input type="text"/>	gal/day
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These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

Enter pond type (settling basin, retention pond) then enter dimensions to estimate storage volumes.  
Use "TAB" key to move to data entry fields or mouse pointer to pulldown menus.

LW = liquid width, ft  
EW = earthen basin width, ft  
FB = freeboard, ft  
S = sideslope, ft./ft.  
LL = liquid length, ft  
EL = earthen basin length, ft  
LD = liquid depth, ft  
ED = earthen basin depth, ft  
 $LW = EW - 2 \times FB \times S$   
 $LL = EL - 2 \times FB \times S$   
 $LD = ED - FB$

**Cropland where nutrients from dairy are applied to crops harvested, then fed to owner/operators own dairy herd or exported off-site.**

### Annual Nitrogen Import Estimates

### Annual Nitrogen Export Estimates

Manure	Units (Tons or Gallons)	Tons or 1000 Gallons Exported	Moisture Content (% for solids, mg/L for liquids)	Total Nitrogen (% for solids, mg/l for liquids)	Phosphorus (% for solids, mg/l for liquids)
Sep. Solids	Tons				
Corral Solids	Tons				
Liquid Manure	Gallons		NA		

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## Summary

### Land Use

Fields and Facility Combined	-	acres
Dairy Production Area (Corrals, Barns, Ponds, Feed Storage)	-	acres
Crop Land Area	-	acres
Cropland Area used for Waste Application	-	acres

### Herd, Milking and Milk Barn/Parlor

Milk Cows	-	head
Dry Cows	-	head
Bred Heifers (15 - 24 months)	-	head
Heifers (7 - 14 months, to Breeding)	-	head
Calves (4 - 6 months)	-	head
Calves (to 3 months)	-	head
Total Number of Animals	-	head
Average number of Milk Cows per String sent to Milk House	-	Milk Cows/String
Number of milking strings entering milk barn (per milking)	-	Strings/Milking
Manure Production by herd for Storage Period:	-	cu. Ft.
Storage Period in days (minimum of 120 days is recommended:)	-	days storage
Estimated Manure production (cu. Ft.) for Storage Period:	-	cu. Ft.
Estimated gallons of waste production for Storage Period:	-	gallons
Total Barn Water Volume (gallons) for Storage Period:	-	gallons

### Roof, Paved and Earthen Rainfall Runoff Areas

Total Area Receiving Rainfall and Draining to Ponds	-	sq. ft.
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### Retention Pond and Settling Basin Estimates

Liquid Storage Surface Area (Wastewater Ponds only)	-	sq. ft.
Rainfall Drained to Wastewater Storage Ponds for Storage Period	-	gallons
Waste Production	-	gallons
Barnwater	-	gallons
Barnwater Comparative Estimate (gallons/cow/day)	-	gallons/cow/day
Fresh Flush Water for Storage Period	-	gallons
25 Year/24 Hour Storm Event (NOAA Atlas 2, 1973)	-	inches
Critical Storage Period of ____ days Precipitation (DWR Climate Data)	-	inches
Combined Critical Storage Period and 25 year/24 Hour Storm Event	-	inches
Total Storage Capacity Required	-	gallons
Total Storage Capacity Required [Converted to Volume (cu. Ft.)]	-	cu. Ft.
Existing Storage Capacity (Adjusted for Dead Storage Loss)	-	cu. Ft.

### Existing Capacity Meets Estimated Storage Needs?

### Nitrogen (N) and Phosphorus (P) Excretion Estimates

Daily Gross Nitrogen Excretion Estimates	-	lbs N day
Annual Gross Nitrogen Excretion Estimates	-	lbs N year
Nitrogen to Pond Storage after Ammonia Losses (30% Loss Applied)	-	lbs N year
Nitrogen to Drylot Storage after Ammonia Losses (30% Loss Applied)	-	lbs N year
Total N in Storage (Ponds & Drylot Combined after 30% Ammonia Loss)	-	lbs N year
Daily Gross Phosphorus Excretion Estimates	-	lbs P day
Annual Gross Phosphorus Excretion Estimates	-	lbs P year
Phosphorus to Pond Storage	-	lbs P year
Phosphorus to Drylot Storage	-	lbs P year
Total P In Storage (Ponds and Drylot combined)	-	lbs P year

### Nitrogen and Phosphorus Import Estimates

Total Nitrogen Imports (Onto facility as chemical fertilizers)	-	lbs N year
Total Phosphorus Imports (Onto facility as chemical fertilizers)	-	lbs P year

### Nitrogen and Phosphorus Export Estimates

Total Nitrogen Exports (Off facility as manure)	-	lbs N year
Total Phosphorus Exports (Off facility as manure)	-	lbs P year

### Annual Nitrogen and Phosphorus Balance Estimate

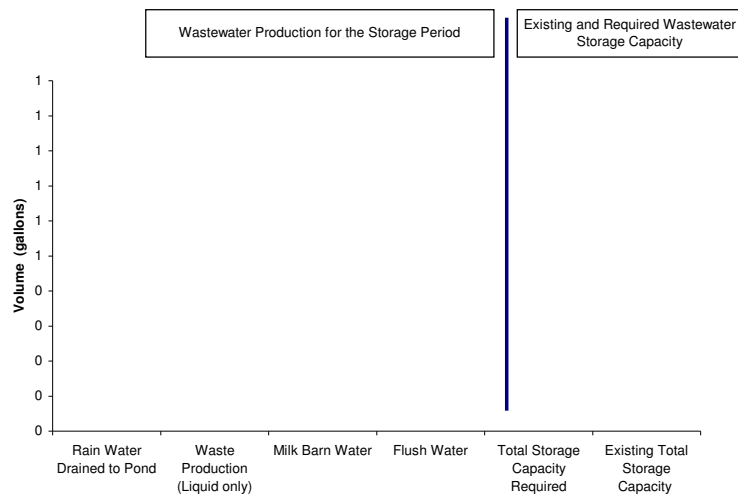
Total N in Storage (after 30% Ammonia Loss)	-	lbs
Nitrogen Imported (Chemical Fertilizer)	-	lbs
Nitrogen Exported (As Manure)	-	lbs
Nitrogen Removed by all Crops	-	lbs
<b>Nitrogen Balance (N Generated Minus N Removed)</b>	-	lbs
Total Phosphorus in Storage	-	lbs
Phosphorus Imported (Chemical Fertilizer)	-	lbs
Phosphorus Exported (as Manure)	-	lbs
Phosphorus Removed by Crops	-	lbs
<b>Phosphorus Balance (P Generated Minus P Removed)</b>	-	lbs

These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

**Figure 1.**

**Figure 1. Preliminary Estimate of Liquid Storage Capacity (Lagoons)**

**Figure 1.**  
**Preliminary Estimate of Liquid Storage Capacity (Lagoons)\***



This graph estimates how many gallons of water and waste are sent to the wastewater storage ponds (lagoons) on your dairy during the selected \_\_\_\_\_ day storage period.

Your wastewater storage ponds (lagoons) must be very close to empty as a result of applying nutrients to crops over the last year starting in the beginning of October and should not fill before \_\_\_\_\_.

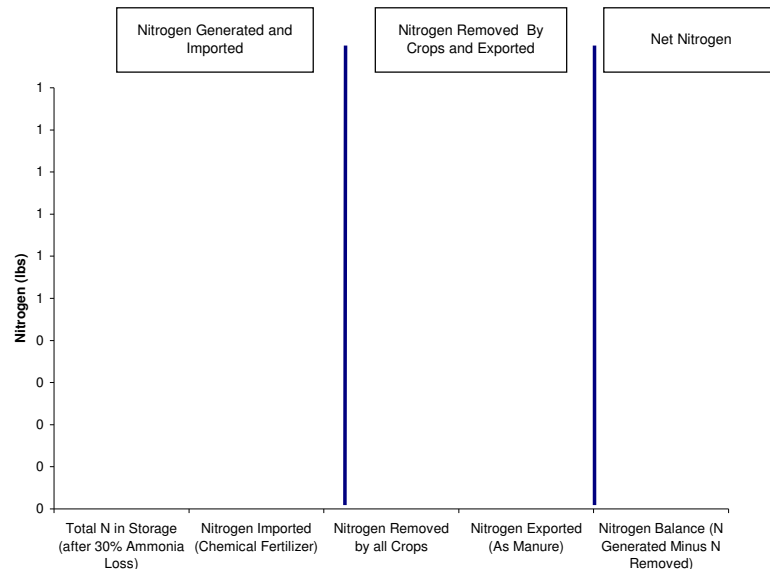
**Are my ponds (lagoons) large enough?**

In your case you have: \_\_\_\_\_ gallons of liquid storage capacity

You need: \_\_\_\_\_ gallons of liquid storage capacity

**Answer:** \_\_\_\_\_

**Figure 2.**  
**Preliminary Estimate of Nitrogen Balance on an Annual Basis\***



**Figure 2 - Preliminary Estimate of Nitrogen Balance on an Annual Basis**

This graph estimates the total pounds of Nitrogen Excreted from the herd ending up in storage, Nitrogen Imported (as fertilizer), Nitrogen taken up by all Crops associated with the dairy, Nitrogen Exported (typically as dry manure), and ultimately Nitrogen Balance, Excess or Deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

**Do I have enough cropland to take up the Nitrogen I generate?**

Total N in Storage (after 30% Ammonia Loss) \_\_\_\_\_ pounds

Nitrogen Imported (Chemical Fertilizer) \_\_\_\_\_ pounds

Nitrogen Removed by all Crops \_\_\_\_\_ pounds

Nitrogen Exported (As Manure) \_\_\_\_\_ pounds

**Answer:** \_\_\_\_\_ pounds

It appears that the  
Crop rotation is \_\_\_\_\_ of taking up  
the Nitrogen generated by your herd  
on an annual basis.

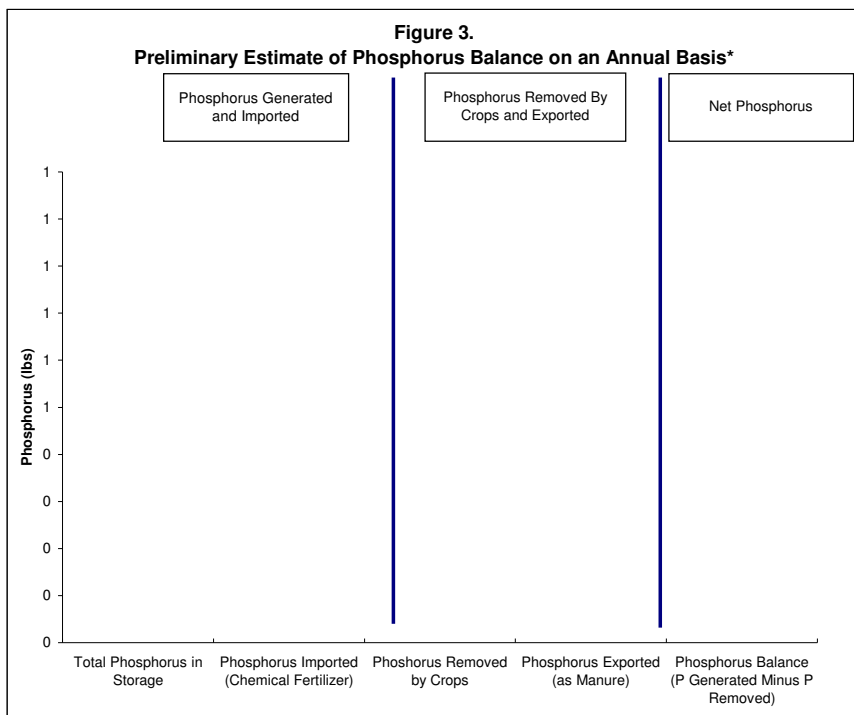
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**Figure 3.**  
**Preliminary Estimate of Phosphorus Balance on an Annual Basis\***

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**Figure 3 - Preliminary Estimate of Phosphorus Balance on an Annual Basis**

This graph estimates the total pounds of Phosphorus Excreted from the herd ending up in storage, Phosphorus



Imported (as fertilizer), Phosphorus taken up by all Crops associated with the dairy, Phosphorus Exported (typically as dry manure), and ultimately Phosphorus Balance, Excess or Deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

**Do I have enough cropland to take up the Phosphorus I generate?**

Total Phosphorus in Storage	-	pounds
Phosphorus Imported (Chemical Fertilizer)	-	pounds
Phosphorus Removed by Crops	-	pounds
Phosphorus Exported (as Manure)	-	pounds
<b>Answer:</b>	<b>-</b>	<b>pounds</b>

It appears that the  
Crop rotation is \_\_\_\_\_ of taking up  
the Phosphorus generated by your herd  
on an annual basis.

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